

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

First Named
Inventor : Eric Beran et al.

Appln. No. : 10/822,444

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For : METHOD AND APPARTUS FOR
CONSTRUCTING REPRESENTATIONS
OF OBJECTS AND ENTITIES

Docket No. : M61.12-0608

Confirmation No.: 1429

Group Art Unit: 2174

Examiner: J. J. Lee

BRIEF FOR APPELLANTS

FILED ELECTRONICALLY AUGUST 11, 2008

Sir:

This is an Appeal from an Office Action dated December 10, 2007 in which claims 1-31 were finally rejected.

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REAL PARTY IN INTEREST

Microsoft Corporation, a corporation organized under the laws of the state of Washington, and having offices at One Microsoft Way, Redmond, Washington 98052, has acquired the entire right, title and interest in and to the invention, the application, and any and all patents to be obtained therefor, as set forth in the Assignment filed with the patent application and recorded on Reel 015565, frame 0124.

NO RELATED APPEALS OR INTERFERENCES

There are no known related appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

STATUS OF THE CLAIMS

- | | | |
|------|--|------|
| I. | Total number of claims in the application. | |
| | Claims in the application are: | 1-31 |
| II. | Status of all the claims. | |
| A. | Claims canceled: | none |
| B. | Claims withdrawn but not cancelled: | none |
| C. | Claims pending: | 1-31 |
| D. | Claims allowed: | none |
| E. | Claims rejected: | 1-31 |
| F. | Claims Objected to: | none |
| III. | Claims on appeal | |
| | The claims on appeal are: | 1-31 |

STATUS OF AMENDMENTS

No amendments have been filed after the final rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

References to specific reference numbers in the specification and drawings are provided as examples only, and do not imply that the claims are limited in scope to only these specific reference numbers.

Independent claim 1 is directed to a method (900 shown in FIG. 9) of constructing a representation of an object (e.g., 410) having at least one property (e.g., 411). See generally FIGS. 4-7 and 9 and page 15, line 1 – page 26, line 5. More specific reference to page and line numbers is provided below. The method of claim 1 includes the step (905) of identifying at least one property group (e.g., 460 and 470) associated with the object (410) which has been chosen to represent the object, at least one property of the object belonging to each property group (460 and 470) associated with the object. See page 25, lines 9-20. The method then includes the step (910) of identifying any other object (e.g., 450) that the object (410) references within a property of an identified property group (e.g., 460). See page 25, lines 21-24. See also, page 19, line 5 – page 20, line 5. Next, the method includes the step (915) of retrieving data corresponding to each of the properties belonging to the at least one property group (e.g., 46 and 470). See page 25, lines 24-28. See also, page 19, line 20 – page 24, line 17. After storing the retrieved data on a tangible computer storage medium, the method includes the step (920) of representing the object by using the retrieved data to generate a user interface (e.g., 500). See page 25, line 28 – page 26, line 5. Also, see again page 19, line 20 – page 24, line 17.

Independent claim 11 is directed to a method (800) of constructing representations of objects each having at least one property. See generally FIGS. 4-8 and page 15, line 1 – page 26, line 5. More specific reference to page and line numbers is provided below. The method of claim 11 includes the step (805) of associating property groups (e.g., 460, 470, 480, 490) with objects (e.g., 410, 420, 430, 450) in a data base (305), each property group associated with an object including at least one property of the object. See page 24, lines 18-30. The method next includes the step (810) of storing the property groups in the database. See page 24, line 30 – page 25, line 2. Next, the method includes the step (815) of, for each of a plurality of objects in the database, specifying which property groups (e.g., 460 and 470) are to be used in representing the object

(e.g., 410). See page 25, lines 2 – 8. For each of the plurality of objects in the database, the specification of property groups is stored on a tangible computer storage medium for use in generating a user interface representing the object.

Independent claim 22 is directed to an object representation system (300) for constructing a representation (315) of an object having at least one property. See generally FIGS. 1-9 and page 14, line 17 – page 26, line 5. More specific reference to page and line numbers is provided below. The system of claim 22 includes an object database (305) storing data for populating instances of the object. See e.g., page 14, lines 20-22. The system also includes an object definition database (306) storing object definition data which defines properties (e.g., 411) of the object (e.g., 410), and storing at least one property group (e.g., 460 and 470) associated with the object. See e.g., page 14, lines 22-25. Finally, the system includes a processor (e.g., 120) configured to implement an object representation engine (310), the engine configured to generate a user interface (e.g., 315, 500, 550) representation of the object using at least one property group stored in the object definition database. See e.g., page 14, lines 25-29, page 15, line 1 – page 16, line 11.

GROUND S OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 1-10 are unpatentable under 35 U.S.C. § 102(b) as being anticipated by Chang et al., U.S. Patent No. 5,627,979 (hereafter referred to as “Chang”).
2. Whether claims 11-21 are unpatentable under 35 U.S.C. § 102(b) as being anticipated by Chang.
3. Whether claims 22-31 are unpatentable under 35 U.S.C. § 102(b) as being anticipated by Chang.

ARGUMENT

1. CLAIMS 1-10 ARE ALLOWABLE OVER CHANG

Independent claim 1 recites a method of constructing a representation of an object having at least one property. The method includes the steps of: “identifying at least one property group associated with the object which has been chosen to represent the object, at least one property of

the object belonging to each property group associated with the object;” “identifying any other object that the object references within a property of an identified property group;” “retrieving data corresponding to each of the properties belonging to the at least one property group;” “storing the retrieved data on a tangible computer storage medium;” and “representing the object by using the retrieved data to generate a user interface.”

In the Final Office Action, claims 1-10 were rejected under 35 U.S.C. § 102(b) as being anticipated by Chang. In rejecting independent claim 1, the Office Action stated:

Re claim 1, Chang et al. discloses a method of constructing a representation of an object having at least one property, the method comprising:

identifying at least one property group associated with the object which has been chosen to represent the object (employee 1910 group, see figure 19 for example), at least one property of the object belonging to each property group associated with the object (Salary Employee 1920 and regular employee 1930, see figure 19 for example);


identifying any other object that the object references within a property of an identified property group (mapping person class into employee table, see figure 16 for example);

retrieving data corresponding to each of the properties belonging to the at least one property group (user clicks on the Select Tables item 1120 which displays a listbox to select the Employee table, see column 13 lines 26-28 for example);

storing the retrieved data on a tangible computer storage medium (see column 7 lines 7-9, column 9 lines 2-4 and figure 1 for example); and

representing the object using the retrieved data (representation for accessing objects from a data store, see column 6 line 15 for example).

Further, in response to arguments presented by Appellant during prosecution of the present application, the Examiner also made the following statements in regard to independent claim 1:

In response to applicant’s arguments that the prior art does not teach “identifying at least one property group associated with the object which has been chosen to represent the object, at least one property of the object belonging to each property group associated with the object”, examiner disagrees. Figure 19 of prior art is described as an illustration of graphical user interfaces (GUI). Looking at the representation of the GUI of figure 19, one can clearly see the name of the “property group” which is “employee”; and an “object which has been chosen to represent the object” which is  for example; a “property of the object” which is “SalaryEmp” for example belonging to the “property group” which is

“employee”. The representation of a table does not exclude it from being a representation of an object. A table is not excluded from being an object.

These interpretations of Chang are respectfully traversed, and it is requested that the Board reverse the rejection of claims 1-10 as being anticipated by Chang. Chang does not anticipate independent claim 1, as Chang fails to teach multiple steps required in this claim.

Independent claim 1 recites the above-discussed limitation of “identifying at least one property group associated with the object which has been chosen to represent the object, at least one property of the object belonging to each property group associated with the object.” This claim limitation is not taught by Chang for several reasons. First, in contrast to the assertion made by the Examiner, there is no teaching in Chang that the name “Employee” is a property group having properties. Instead, “Employee” is a name of the table 1910. See Chang at col. 14, lines 54-55. A name of a table is not a property group.

Second, even if “Employee” represented a property group (there is no teaching in Chang to suggest it does), there is also no teaching that at least one property of the object belongs to such a property group. While the Office Action cites items SalaryEmp 1920 and RegularEmp 1930 from figure 19 of Chang as being properties in the supposed property group “Employee”, Chang does not support such an interpretation. Instead, Chang describes items 1920 and 1930 as being two classes to which the table 1910 is to be mapped. See Chang at col. 14, lines 52-56. Lacking a teaching or suggestion of this first step recited in independent claim 1, claims 1-10 cannot be anticipated by Chang.

Further, since Chang does not teach property groups as required by independent claim 1, Chang also cannot teach or suggest the steps of “identifying any other object that the object references within a property of an identified property group.” Chang does not support the interpretation set forth in the Office Action that this step is taught in figure 16 of that patent by mapping a person class into an employee table. Additionally, this interpretation is inconsistent with the interpretation applied in the Office Action regarding the claim limitation “identifying at least one property group associated with the object which has been chosen to represent the object, at least one property of the object belonging to each property group associated with the

object.” There, the Office Action used the mapping of Employee table 1910 to classes 1920 and 1930 (referring to FIG. 19 of Chang) as representing the required claim limitation of properties associated with a property group. In contrast, the Office Action now cites the mapping of a table 1060 to Person class 1070 in FIG. 16 as representing the required identification of any other object that the object references within a property of an identified property group. It appears to be inconsistent to consider classes to which a table is mapped to be both properties of a property group and objects referenced within a property of an identified property group, and it is thus respectfully maintained that Chang does not teach or suggest the limitation of “identifying any other object that the object references within a property of an identified property group.” Lacking a teaching or suggestion of this claim limitation, Chang cannot anticipate claims 1-10.

Additionally, it is respectfully maintained that Chang does not teach the limitations of “retrieving data corresponding to each of the properties belonging to the at least one property group,” and “representing the object by using the retrieved data to generate a user interface,” separately or in combination. Chang does not support the interpretation set forth in the Office Action that the step of retrieving data is taught at col. 13, lines 26-28 of that reference (relating to a user clicking on a Select Tables item in order to display a listbox). For instance, at col. 13, lines 21-32, Chang states:

In this scenario, the user selects an existing table Employee and an existing class Person. Referring back to FIG. 10, the user selects the existing table Employee by clicking on the Schema menu item 1030 from the menu bar 1010. Referring now to FIG. 11, from a subsequently displayed Schema pulldown menu 1110, the user clicks on the Select Tables item 1120 which displays a listbox 1130 listing existing tables from which the user may select. The user may then click on Employee 1140 within the listbox to select the Employee table. This causes the Employee table icon 1060 to be displayed within the Schema Mapper Window 1000 as illustrated in FIG. 12.

Thus, while Chang teaches that icons representing tables can be displayed via such a pulldown menu selection process, it does not teach “retrieving data corresponding to each of the properties belonging to the at least one property group.” Similarly, in the text surrounding col. 6, line 15, which was referenced by the Office Action as teaching “representing the object by using the retrieved data to generate a user interface,” Chang states:

In accordance with another aspect of the present invention, object oriented language independence is provided by the use of the object oriented language independent Schema Mapping Definition Language, the object oriented language independent Schema Mapping Internal Representation, and Code Generators which generate code in various object oriented languages from the Schema Mapping Internal Representation for accessing objects from data stores. These Code Generators may be used to generate access methods based on the Schema Mapping Internal Representation for accessing objects from a data store. To provide such access to a data store, a Code Generator may generate a combination of object oriented programming language and data store access language. The system then generates a make file describing the dependency of files, invokes the proper compilers, links the appropriate run-time libraries, and creates executable code for accessing a data store.

It is respectfully maintained that this is not a teaching of “representing the object by using the retrieved data to generate a user interface” as required by claim 1. Lacking a teaching of these claim limitations from independent claim 1, claims 1-10 cannot be anticipated by Chang.

For the above-described reasons, it is respectfully requested that the rejection of these claims be reversed.

2. CLAIMS 11-21 ARE ALLOWABLE OVER CHANG

The above arguments presented in defense of claims 1-10 are incorporated by reference into the following arguments in defense of claims 11-21.

Independent claim 11 recites a method of constructing representations of objects each having at least one property. Method claim 11 includes the steps of: “associating property groups with objects in a data base, each property group associated with an object including at least one property of the object;” “storing the property groups in the database;” “for each of a plurality of objects in the database, specifying which property groups are to be used in representing the object;” and “for each of the plurality of objects in the database, storing on a tangible computer storage medium the specification of property groups for use in generating a user interface representing the object.”

At least several of these limitations are neither taught nor suggested by Chang. Specifically, at least the following two of the above recited limitations are not taught or

suggested by Chang: “associating property groups with objects in a data base, each property group associated with an object including at least one property of the object;” and “for each of a plurality of objects in the database, specifying which property groups are to be used in representing the object.”

In rejecting claim 11, the Final Office Action stated:

Re claim 11, Chang et al. discloses a method of constructing representations of objects each having at least one property, the method comprising: associating property groups with objects in a data base, each property group associated with an object including at least one property of the object; storing the property groups in the database; and for each of a plurality of objects in the database, specifying which property groups are to be used in representing the object (see figure 19 and abstract for example); and for each of the plurality of objects in the database, storing on a tangible computer storage medium the specification of a property groups for use in generating a user interface representing the object (see column 7 lines 7-9 and column 9 lines 2-4 for example).

Further, in response to Appellant’s previously submitted arguments, the Examiner stated:

In response to applicant’s arguments regarding claim 11, again Chang teaches of “property group” (“employee” for example) which meets the claim limitations as argued above. Furthermore. Chang teaches of using computer with the invention, and that data is stored using the database which can also be used with the computer (see rejection above).

Appellant traverses this interpretation applied by the Examiner. As discussed with reference to claim 1, Chang provides no teaching of property groups as used in the context of independent claim 11 and the present application. As such, Chang provides no teaching of the claim limitation of “associating property groups with objects in a data base, each property group associated with an object including at least one property of the object.” Chang also provides no teaching of, for each of a plurality of objects in the database, “specifying which property groups are to be used in representing the object.” Lacking a teaching of these claim limitations from independent claim 11, claims 11-21 cannot be anticipated by Chang. It is respectfully requested that the rejection of claims 11-21 be reversed.

3. CLAIMS 22-31 ARE ALLOWABLE OVER CHANG

The above arguments presented in defense of claims 1-21 are incorporated by reference into the following arguments in defense of claims 22-31.

Independent claim 22 is directed to an object representation system for constructing a representation of an object having at least one property. System claim 22 comprises: “an object database storing data for populating instances of the object;” “an object definition database storing object definition data which defines properties of the object, and storing at least one property group associated with the object;” and “a processor configured to implement an object representation engine, the engine configured to generate a user interface representation of the object using at least one property group stored in the object definition database.”

In rejecting independent claim 22, the Final Office Action stated:

Re claim 22, Chang et al. discloses an object representation system for constructing a representation of an object having at least one property, the system comprising: an object database storing data for populating instances of the object; an object definition database storing object definition data which defines properties of the object, and storing at least one property group associated with the object; and a processor (compiles, see column 9 lines 33-35, and using computer, see column 9 lines 2-4 for example) configured to implement an object representation engine, the engine configured to generate a user interface representation of the object using at least one property group stored in the object definition database (see figures 16, 19 and abstract for example).

In response to Appellant’s previously submitted arguments refuting this interpretation of Chang, in section 3 of the Final Office Action, the Examiner responded to these arguments, stating:

In response to applicant’s arguments regarding claim 22, again Chang teaches of “an object definition database storing object definition data which defines properties of the object, and storing at least one property group associated with the object” examiner disagrees. The abstract of Chang teaches of GUI mapping and accessing objects in data stores, further in column 9 lines 1-5 describes accessing database to support the client data store manager and routing information to proper server data store manager in support of the schema of the invention for example. Figure 16 also shows “object definition data which defines properties of the object” such as “firstName, lastName”. Furthermore. Chang teaches of using computer, and compiling the invention (see rejection above).

These interpretations of Chang applied by the Examiner are respectfully traversed. Chang provides no teaching of property groups as used in the context of independent claim 22 and the present application. As such, Chang provides no teaching of the claim limitation of “an object definition database storing object definition data which defines properties of the object, and storing at least one property group associated with the object.” (Emphasis added). Chang also does not teach a “processor configured to implement an object representation engine, the engine configured to generate a user interface representation of the object using at least one property group stored in the object definition database.” (Emphasis added). Lacking a teaching of these claim limitations from independent claim 22, claims 22-31 cannot be anticipated by Chang. Consequently, it is respectfully requested that the rejection of claims 22-31 be reversed by the Board.

4. CONCLUSION

In conclusion, the Appellant respectfully submit that claims 1-31 are allowable over the cited Chang reference for at least the reasons laid out above. Thus, Appellant respectfully requests that the Board reverse the rejections of claims 1-31 and find the claims in condition for allowance.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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JVK/jmt

Appendix A: Claims On Appeal

1. A method of constructing a representation of an object having at least one property, the method comprising:
 - identifying at least one property group associated with the object which has been chosen to represent the object, at least one property of the object belonging to each property group associated with the object;
 - identifying any other object that the object references within a property of an identified property group;
 - retrieving data corresponding to each of the properties belonging to the at least one property group;
 - storing the retrieved data on a tangible computer storage medium; and
 - representing the object by using the retrieved data to generate a user interface.
2. The method of claim 1, wherein the step of representing the object further comprises visually representing the object by displaying the retrieved data.
3. The method of claim 2, wherein the step of displaying the retrieved data further comprises displaying names of properties belonging to the at least one property group adjacent values of those properties.
4. The method of claim 3, wherein displaying names of properties belonging to the at least one property group further comprises displaying a name of each property group adjacent the names of the properties belonging to that property group and adjacent the values of those properties.
5. The method of claim 1, wherein representing the object using the retrieved data further comprises representing the object using its own property groups and the ones of its parent.

6. The method of claim 1, wherein at least one object inheritance hierarchy exist between the object and the other identified objects, and wherein each property group is unique to a particular object inheritance hierarchy.
7. The method of claim 6, wherein the object is a specialization of a second object, and wherein the object inherits the property groups associated with the second object.
8. The method of claim 6, wherein for each property group, properties belonging to the property group include at least one property of the object and one or more properties of only one other object.
9. The method of claim 8, wherein for at least one property group, the step of retrieving data corresponding to each of the properties belonging to the property group further comprises retrieving the data corresponding to properties of the object and to properties of the only one other object associated with the property group.
10. The method of claim 1, wherein identifying the at least one property group associated with the object further comprises identifying a default property group associated with the object.
11. A method of constructing representations of objects each having at least one property, the method comprising:
 - associating property groups with objects in a data base, each property group associated with an object including at least one property of the object;
 - storing the property groups in the database;
 - for each of a plurality of objects in the database, specifying which property groups are to be used in representing the object; and
 - for each of the plurality of objects in the database, storing on a tangible computer storage medium the specification of property groups for use in generating a user interface representing the object.

12. The method of claim 11, wherein object inheritance hierarchies exist between some of the plurality of objects in the database, wherein the step of associating property groups with objects further comprises associating property groups with objects such that each property group is unique to a particular object inheritance hierarchy.

13. The method of claim 11, wherein the step of associating property groups with objects in the data base further comprises associating property groups with objects in the database such that at least one of the property groups is associated with two objects such that properties of the two objects belong to the property group.

14. The method of claim 11, and for constructing a representation of a particular object having at least one property, the method further comprising:

identifying at least one property group associated with the object which has been chosen to represent the object, at least one property of the object belonging to each property group associated with the object;

identifying any other object that the object references within a property of an identified property group;

retrieving data corresponding to each of the properties belonging to the at least one property group; and

representing the object by using the retrieved data to generate a user interface.

15. The method of claim 14, wherein the step of representing the object further comprises visually representing the object by displaying the retrieved data.

16. The method of claim 15, wherein the step of displaying the retrieved data further comprises displaying names of properties belonging to the at least one property group adjacent values of those properties.

17. The method of claim 16, wherein displaying names of properties belonging to the at least one property group further comprises displaying a name of each property group adjacent the names of the properties belonging to that property group and adjacent the values of those properties.
18. The method of claim 14, wherein at least one object inheritance hierarchy exist between the object and the other identified objects.
19. The method of claim 18, wherein the object is a specialization of a second object, and wherein the object inherits the property groups associated with the second object.
20. The method of claim 18, wherein for each property group, properties belonging to the property group include at least one property of the object and one or more properties of only one other object.
21. The method of claim 20, wherein for at least one property group, the step of retrieving data corresponding to each of the properties belonging to the property group further comprises retrieving the data corresponding to properties of the object and to properties of the only one other object associated with the property group.
22. An object representation system for constructing a representation of an object having at least one property, the system comprising:
 - an object database storing data for populating instances of the object;
 - an object definition database storing object definition data which defines properties of the object, and storing at least one property group associated with the object; and
 - a processor configured to implement an object representation engine, the engine configured to generate a user interface representation of the object using at least one property group stored in the object definition database.

23. The system of claim 22, wherein the engine is configured to generate the representation of the object by implementing the steps comprising:

identifying at least one property group associated with the object which has been chosen to represent the object, at least one property of the object belonging to each property group associated with the object;

identifying any other object that the object references within a property of an identified property group;

retrieving data corresponding to each of the properties belonging to the at least one property group; and

representing the object using the retrieved data to generate the user interface representation of the object.

24. The system of claim 23, wherein the step of representing the object further comprises visually representing the object by displaying the retrieved data.

25. The system of claim 24, wherein the step of displaying the retrieved data further comprises displaying names of properties belonging to the at least one property group adjacent values of those properties.

26. The system of claim 25, wherein displaying names of properties belonging to the at least one property group further comprises displaying a name of each property group adjacent the names of the properties belonging to that property group and adjacent the values of those properties.

27. The system of claim 23, wherein at least one object inheritance hierarchy exist between the object and the other identified objects, and wherein each property group is unique to a particular object inheritance hierarchy.

28. The system of claim 27, wherein the object is a specialization of a second object, and wherein the object inherits the property groups associated with the second object.

29. The system of claim 27, wherein for each property group, properties belonging to the property group include at least one property of the object and one or more properties of only one other object.

30. The system of claim 29, wherein for at least one property group, the step of retrieving data corresponding to each of the properties belonging to the property group further comprises retrieving the data corresponding to properties of the object and to properties of the only one other object associated with the property group.

31. The system of claim 23, wherein identifying the at least one property group associated with the object further comprises identifying a default property group associated with the object.

Appendix B: Evidence Appendix

There is no known evidence submitted pursuant to 37 CFR §§ 1.130, 1.131 or 1.132 or other evidence entered by the Examiner.

Appendix C: Related Proceedings Appendix

There are no known related appeals or interferences regarding the present appeal.